

## **REMARKS/ARGUMENTS**

This is a full and timely response to the final Office action mailed March 14, 2007. Reexamination and reconsideration in view of the foregoing amendments and following remarks is respectfully solicited.

Claims 1-5, 7-25, and 27-30 are pending in this application with claims 1, 10, 15, and 27 being independent claims. Claims 1-4, 8, 10, 15, 27, and 29 have been amended. Claims 5-7, 24-26, and 31-48 are cancelled. No new matter is believed to have been added.

### **Rejections Under 35 U.S.C. § 112, First Paragraph**

All of the pending claims are rejected as failing to comply with the written description requirement. Specifically, the Examiner alleges that Applicant failed to show possession of the claim limitation that the thickness of the electroplated layer had a thickness of less than about 10 microns. Although the Applicants disagree with the Examiner, Applicants have amended the independent claims to remove the limitation that the layer has a thickness that is mostly less than about 10 microns, in order to expedite prosecution of this case. Consequently, the rejections under 35 U.S.C. § 112 should be withdrawn.

### **Rejections Under 35 U.S.C. § 103(a)**

Claims 1 to 5, 7 to 12, 15 to 19, 22 to 25, 27, and 29 to 30 are rejected as being unpatentable over U.S. Patent No. 6,183,888 to Alperine et al. (“Alperine”) in view of U.S. Patent No. 4,810,334 to Honey et al. (“Honey”). These rejections are respectfully traversed.

Independent claim 1 has been amended to now recite, *inter alia*, electrolytically depositing a metal layer on a surface of a substrate, wherein the metal layer comprises platinum and a supplementary constituent, the supplementary constituent comprising particles selected from the group consisting of Cr, Si, Zr, and alloys thereof, wherein the metal layer is deposited from a single electrolyte composition during a single electrolytic step and the electrolyte composition comprises a platinum salt and particles of the supplementary constituent having a

mean particle diameter ranging between 1 micron and 10 microns, and the particles and the electrolyte composition does not include aluminum.

Claim 10 has been amended and now recites, *inter alia*, electroplating platinum metal on said substrate via an electrolyte comprising particles of a supplementary constituent and a reactive element, the supplementary constituent having a mean particle diameter ranging between 1 micron and 10 microns, and the particles and the electrolyte not including aluminum.

Independent claim 15 has been amended and now recites, *inter alia*, electroplating a metal layer on a surface of the substrate from an electrolytic bath comprising a platinum salt electrolyte and particles of at least one supplemental constituent having a mean particle diameter ranging between 1 micron and 10 microns, wherein the electrolytic bath does not including aluminum, the electroplated metal layer comprises platinum metal and particles of the at least one supplementary constituent and at least one reactive element entrapped within said platinum metal, wherein the at least one supplementary constituent comprises particles selected from the group consisting of Cr, Si, Zr, and alloys thereof and at least one reactive element is selected from the group consisting of Y, Hf, La, Sc, Ta, and Re, depositing aluminum on the electroplated metal layer, and forming a platinum aluminide coating on the substrate, wherein said platinum aluminide coating comprises the at least one supplementary constituent and at least one reactive element.

Independent claim 27 has also been amended and now recites, *inter alia*, electroplating a platinum metal layer on the substrate, wherein the platinum metal layer is electrodeposited via an electrolyte composition comprising a platinum salt and chromium particles having a mean particle diameter ranging between 1 micron and 10 microns, the particles and the electrolyte composition not including aluminum, concurrently with the step of electroplating, depositing the chromium particles on the substrate as part of the platinum metal layer, wherein the chromium particles are entrapped within the platinum metal layer, optionally, exposing the substrate to a first heat treatment, and thereafter, aluminizing said substrate.

Alperine discloses a process for producing a coating for protecting superalloy articles against high temperature oxidation and hot corrosion that comprises forming, on the surface of the article, a first deposit of an agglomerated powdered alloy containing at least chromium,

aluminum and an active element, and filling the open pores of the powder deposit by a second, electrolytically applied, deposit of a precious platinum group metal. See Abstract. Honey teaches a method of producing an overlay coating which comprises plating a protection layer comprising a metal matrix containing particles of  $\text{CrAlM}_2$  and plating an anchoring layer comprising a metal layer containing larger particles and spray coating a thermal barrier of a refractory material. See Abstract.

In contrast to Alperine and Honey, claims 1, 10, 15, and 27 each recite steps where aluminum is not included in the electrolyte used to electrolytically deposit platinum and a supplemental constituent on the substrate. In particular, nowhere in the references is there a teaching of electrolytically depositing a metal layer on a surface of a substrate, wherein the metal layer comprises platinum and a supplementary constituent, wherein the metal layer is deposited from a single electrolyte composition during a single electrolytic step and the electrolyte composition comprises a platinum salt and particles of the supplementary constituent having a mean particle diameter ranging between 1 micron and 10 microns, and the particles and the electrolyte composition does not include aluminum, as recited in claim 1. Further, the references do not teach electroplating platinum metal on said substrate via an electrolyte comprising particles of a supplementary constituent and a reactive element, the supplementary constituent having a mean particle diameter ranging between 1 micron and 10 microns, and the particles and the electrolyte not including aluminum, as recited in claim 10. Also, the references do not suggest electroplating a metal layer on a surface of the substrate from an electrolytic bath comprising a platinum salt electrolyte and particles of at least one supplemental constituent having a mean particle diameter ranging between 1 micron and 10 microns, wherein the electrolytic bath does not including aluminum, as recited in claim 15. Additionally, the references do not teach electroplating a platinum metal layer on the substrate, wherein the platinum metal layer is electrodeposited via an electrolyte composition comprising a platinum salt and chromium particles having a mean particle diameter ranging between 1 micron and 10 microns, the particles and the electrolyte composition not including aluminum, as recited in claim 27.

Moreover, with regard to claims 15 and 27, neither Alperine nor Honey teaches depositing aluminum on the electroplated metal layer (which includes platinum and the supplemental constituent).

Thus, as the cited prior art fails to teach or suggest the features recited in the independent claims, the Applicants respectfully request that the rejections under 35 U.S.C. § 103(a) be withdrawn.

Claims 13, 14, and 28 are rejected as being unpatentable over Alperine in view of Honey and further in view of U.S. Patent No. 6,306,277 to Strangman (“Strangman”). These rejections are respectfully traversed.

Claims 13 and 14 depend from independent claim 10, and claim 28 depends from claim 27. Thus, these claims rely on the arguments presented above, as they relate to Alperine and Honey - specifically, that neither reference teaches or suggests steps where aluminum is not included with platinum and a supplemental constituent, when platinum and the supplemental constituent are electrolytically deposited on a substrate. Strangman does not make up for the deficiencies of Alperine and Honey. In particular, although Strangman teaches an electrolyte for use in electrolytic platinum plating, it does not teach steps where aluminum is not included with platinum and a supplemental constituent, when platinum and the supplemental constituent are electrolytically deposited on a substrate. Thus, as none of the cited prior art teaches or suggests the features recited in the independent claims, the Applicants respectfully request that the rejections under 35 U.S.C. § 103(a) be withdrawn.

Claims 20 and 21 are rejected as being unpatentable over Alperine in view of Honey and further in view of U.S. Patent No. 154,435 to Adams, Jr. (“Adams”). These rejections are respectfully traversed.

Claims 20 and 21 depend from independent claim 15. Thus, these claims rely on the arguments presented above, as they relate to Alperine and Honey - specifically, that neither reference teaches or suggests steps where aluminum is not included with platinum and a supplemental constituent, when platinum and the supplemental constituent are electrolytically

deposited on a substrate. Adams does not make up for the deficiencies of Alperine and Honey. In particular, although Adams teaches an improved method for nickel-plating, it does not teach steps where aluminum is not included with platinum and a supplemental constituent, when platinum and the supplemental constituent are electrolytically deposited on a substrate. Thus, as none of the cited prior art teaches or suggests the features recited in the independent claims, the Applicants respectfully request that the rejections under 35 U.S.C. § 103(a) be withdrawn.

### Conclusion

In view of Applicants' amendments and remarks, it is respectfully submitted that Examiner's objections and rejections have been overcome. Accordingly, Applicants respectfully submit that the application is now in condition for allowance, and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the Applicants attorneys at the below-listed telephone number.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

INGRASSIA FISHER & LORENZ

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